**Amendments to the Specification:**

Please replace the paragraph beginning on page 13, line 3 with the following amended paragraph:

> For Ds[0], Ds[1], ..., Ds[N-1], the V coder 212 conducts a code-V coding (nV, kV) for each column and the H coder 213 conducts a code-H coding (nH, kH) for each row. Redundant data resultant from the coding operations is sent to the data allocator 211. Specifically, for Ds[i] (kV bytes × kH bytes) and for all i of $0 \leq i \leq N-1$, the V-coder 212 conducts coding in a column direction to generate redundant data Vs[i] (rV bytes × kH bytes) the H-coder 213 conducts coding in a row direction to generate redundant data Hs[i] (kV bytes × rH bytes). The H-coder 213 conducts coding in a row direction for Vs[i] (rV bytes × kH bytes) or the V-coder 212 conducts coding in a column direction for Hs[i] (kV bytes × rH bytes) to generate redundant data Xs[i] (rV bytes × rH bytes). Having received the redundant data, the data allocator 211 allocates the redundant data in the memory 214 to resultantly obtain N product-code codewords 101, 102, ..., 103, each codewords in the form of nV bytes × nH bytes. Thereafter, from the N product-code codewords in the memory 214, the data allocator 211 outputs, as an ECC block, each row of each product-code codeword ~~in an alternating fashion~~ for each of the N product-code codewords to the signal modulator 222.

Please replace the paragraph beginning on page 14, line 23 with the following amended paragraph:

> Subsequently, each column of the N (kV bytes x kH bytes) two-dimensional array, the V coder 212 conducts coding according to (nV, kV) code V and the H coder 213 conducts coding according to the (nH, kH) code H. Redundant data obtained as a result of the coding operations above is sent to the data allocator 211. Having received the redundant data, the data allocator 211 allocates the redundant data in the memory 214 to resultantly obtain N product-code codewords 401, 402, ..., 403 each of which is in the form of nV bytes x nH bytes. Thereafter, from the N product-code codewords in the memory 214, the data allocator 211 outputs, as an ECC block, each row of each product-code codeword ~~in an alternating fashion~~ for each of the N product-code codewords to the signal modulator 222.

Please replace the paragraph beginning on page 21, line 22 with the following amended paragraph:

That is, the data allocator 211 subdivides a (kV bytes x nH bytes) two-dimensional array including a two-dimensional array of Ds[i] and Hs[i] into N x M (md bytes x nH bytes) two dimensional arrays; a two-dimensional array of Ds'[i][0] and Hs'[i][0], a two-dimensional array of Ds'[i][1] and Hs'[i][1], ..., and a two-dimensional array of Ds'[i][N x M-1] and Hs'[i][N x M-1]. Moreover, the data allocator 211 subdivides the (rV bytes x nH bytes) two-dimensional array including a two-dimensional array of Vs[i] and Xs[i] into M (mr bytes x nH bytes) two dimensional arrays; a two-dimensional array of Vs'[i][0] and Xs'[i][0], a two-dimensional array of Vs'[i][1] and Xs'[i][1], ..., and a two-dimensional array of Vs'[i][M-1] and Xs'[i][M-1]. The data allocator 211 then rearranges these arrays in the memory 214 for each j of $0 \leq j \leq M - 1$ such that the (mr bytes x nH bytes) two-dimensional array including a two-dimensional array of Vs'[i][j] and Xs'[i][j] is just inserted between two (md bytes x nH bytes) two dimensional arrays; a two-dimensional array of Ds'[i][N x j+i] and Hs[i][N x j+i] and a two-dimensional array of Ds'[i][N x j+i+1] and Hs[i][N x j+i+1]. Resultantly, there are obtained the rearranged N (nV bytes x nH bytes) product-code codewords. Thereafter, from the N product-code codewords thus rearranged in the memory 214, the data allocator 211 outputs, as an ECC block, each row of each product-code codeword ~~in an alternating fashion~~ for each of the N product-code codewords to the signal modulator 222.